Claims

1. A method for diagnosing endometrial cancer in a subject suspected of having endometrial cancer comprising:

obtaining from the subject an endometrial tissue sample suspected of being cancerous,

determining the expression of a set of nucleic acid molecules or expression products thereof in the endometrial tissue sample, wherein the set of nucleic acid molecules comprises at least two nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

2. The method of claim 1, wherein the set of nucleic acid molecules comprises at least 3 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

3. The method of claim 1, wherein the set includes at least 4 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

4. The method of claim 1, wherein the set includes at least 5 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

5. The method of claim 1, wherein the set includes at least 10 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

6. The method of claim 1, wherein the set includes at least 15 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

7. The method of claim 1, wherein the set includes at least 20 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

8. The method of claim 1, wherein the set includes at least 30 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

9. The method of claim 1, wherein the set includes at least 40 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

10. The method of claim 1, further comprising:

determining the expression of the set of nucleic acid molecules or expression products thereof in a non-cancerous endometrial tissue sample, and comparing the expression of the set of nucleic acid molecules or expression products thereof in the endometrial tissue sample suspected of being cancerous and the non-cancerous endometrial tissue sample.

11. A method for selecting a course of treatment of a subject having or suspected of having endometrial cancer, comprising:

obtaining from the subject an endometrial tissue sample suspected of being cancerous,

determining the expression of a set of nucleic acid markers or expression products thereof which are differentially expressed in endometrial tumor tissue samples, and

selecting a course of treatment appropriate to the endometrial cancer of the subject.

12. The method of claim 11 wherein the endometrial cancer is endometrioid endometrial carcinoma.

13. The method of claim 12, further comprising:

determining the expression of the set of nucleic acid molecules or expression products thereof in a non-cancerous endometrial tissue sample.

14. The method of claim 11, wherein the expression of a set of nucleic acid markers is determined by a method selected from the group consisting of nucleic acid hybridization and nucleic acid amplification.

15. The method of claim 14, wherein the nucleic acid hybridization is performed using a solid-phase nucleic acid molecule array.

16. A method for evaluating treatment of endometrial cancer, comprising:

obtaining a first determination of the expression of a set of nucleic acid molecules, or expression products thereof, which are differentially expressed in an endometrial tumor tissue sample from a subject undergoing treatment for cancer,

obtaining a second determination of the expression of a set of nucleic acid molecules, or expression products thereof, which are differentially expressed in a second endometrial tumor tissue sample from the subject after obtaining the first determination,

comparing the first determination of expression to the second determination of expression as an indication of evaluation of the treatment.

17. The method of claim 16, wherein the cancer is endometrioid endometrial adenocarcinoma.

18. The method of claim 17, further comprising:

determining the expression of a set of nucleic acid markers which are differentially expressed in non-cancerous endometrial tissue samples.

19. The method of claim 16, wherein the expression of a set of nucleic acid markers is determined by a method selected from the group consisting of nucleic acid hybridization and nucleic acid amplification.

20. The method of claim 16, wherein the nucleic acid hybridization is performed using a solid-phase nucleic acid molecule array.

21. A solid-phase nucleic acid molecule array consisting essentially of at least two nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50 fixed to a solid substrate.

22. The solid-phase nucleic acid molecule array of claim 21, further comprising at least one control nucleic acid molecule.

23. The solid-phase nucleic acid molecule array of claim 21, wherein the set of nucleic acid molecules comprises at least 3 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

24. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 4 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

25. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 5 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

26. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 10 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

27. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 15 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

28. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 20 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

29. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 30 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

30. The solid-phase nucleic acid molecule array of claim 21, wherein the set includes at least 40 nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50.

31. The solid-phase nucleic acid molecule array of claim 21, wherein the solid substrate comprises a material selected from the group consisting of glass, silica, aluminosilicates, borosilicates, metal oxides such as alumina and nickel oxide, various clays, nitrocellulose, or nylon.

32. The solid-phase nucleic acid molecule array of claim 21, wherein the nucleic acid molecules are fixed to the solid substrate by covalent bonding.

33. A solid-phase protein microarray comprising at least two antibodies or antigen-binding fragments thereof, that specifically bind at least two different polypeptides selected from the group consisting of SEQ ID NOs:51-100, fixed to a solid substrate.

34. The protein microarray of claim 33, wherein the microarray further comprises an antibody or antigen-binding fragment thereof, that binds specifically to a cancer-associated polypeptide other than those selected from the group consisting of SEQ ID NOs:51-100.

35. The protein microarray of claim 34, wherein the cancer-associated polypeptide other than those selected from the group consisting of SEQ ID NOs: 51-100 is a endometrial cancer associated polypeptide.

36. The protein microarray of claim 33, further comprising at least one control polypeptide molecule.

37. The protein microarray of claim 33, wherein the antibodies are monoclonal or polyclonal antibodies.

38. The protein microarray of claim 33, wherein the antibodies are chimeric, human, or humanized antibodies.

39. The protein microarray of claim 33, wherein the antibodies are single chain antibodies.

40. The protein microarray of claim 33, wherein the antigen-binding fragments are $F(ab')_2$, Fab, Fd, or Fv fragments.

41. A method for identifying lead compounds for a pharmacological agent useful in the treatment of endometrial cancer, comprising:

contacting a endometrial cancer cell or tissue with a candidate pharmacological agent,

determining the expression of a set of nucleic acid molecules in the endometrial cancer cell or tissue sample under conditions which, in the absence of the candidate pharmacological agent, permit a first amount of expression of the set of nucleic acid molecules wherein the set of nucleic acid molecules comprises at least two nucleic acid molecules selected from the group consisting of SEQ ID NOs:1-50, and

detecting a test amount of the expression of the set of nucleic acid molecules, wherein a decrease in the test amount of expression in the presence of the candidate pharmacological agent relative to the first amount of expression indicates that the candidate pharmacological agent is a lead compound for a pharmacological agent which is useful in the treatment of endometrial cancer.

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42. The method of claim 41, wherein the set of nucleic acid molecules is differentially expressed in endometrioid endometrial tumor tissue samples.